International Committee on Systematic Bacteriology Subcommittee on the Taxonomy of *Bifidobacterium*, *Lactobacillus*, and Related Organisms

Minutes of the Meetings, 1 and 3 September 1993, Bingen, Germany

Open meeting

Minute 1. Call to order. The open meeting was called to order at 8:30 a.m. by Chairperson E. Lauer; K. W. Knox was cochairing the session.

Minute 2. Record of attendance. The members present were F. Dellaglio, F. Gasser, W. Holzapfel, A. Kagermeier-Callaway, K. W. Knox, E. Lauer, T. Mitsuoka, G. Reuter, and B. Sgorbati. Apologies were received from M. Collins, J. London, and N. Weiss. Numerous attendants of the Food Micro '93 congress were present as guests.

Minute 3. Call for research reports. After introductory remarks by E. Lauer and K. W. Knox, the following research reports were presented: L. M. T. Dicks et al., The Genotypic Relatedness of *Lactobacillus sake*, *Lactobacillus curvatus*, and *Lactobacillus bavaricus* Isolated from Meat; R. Havenaar et al., Survival of Probiotic and Pathogenic Bacteria in a Computer Controlled Model of the Gastrointestinal Tract; K. Knox et al., The Pathogenic Potential of Lactobacilli; G. Klein et al., Characterisation of Some Clinical Isolates and Biotechnologically Used Strains of *Lactobacillus rhamnosus* by Whole-Cell Protein Analysis; U. Schillinger and W. H. Holzapfel, Ecology and Taxonomic Status of the Genus *Carnobacterium*; T. Yaeshima et al., Identification of Bifidobacteria from Dairy Products and Evaluation of Microplate Hybridization Method; A. Bezborovainy et al., Uptake of Ferrous Iron by Non-Energised Bifidobacteria; B. Biavati et al., Fermentation of Mucins and Plant Polysaccharides by Bifidobacteria; and S. Ventura et al., Typing of *Leuconostoc oenos* Strains with Total DNA and Ribosomal Restriction Patterns. A brief discussion followed each presentation. The issue of pathogenicity in lactobacilli received special attention. After a short break a poster session followed: L. Dicks et al., The Genotypic Relatedness of *Carnobacterium divergens*, *Carnobacterium piscicola*, *Carnobacterium mobile*, and *Carnobacterium gallinarum* using Numerical Analysis of Total Soluble Cell Protein Patterns; E. du Plessis et al., Genotypic Relatedness of Strains within the Species *Lactobacillus paracasei*, *Lactobacillus rhamnosus*, and *Lactobacillus acidophilus* based on Results Obtained by Numerical Analysis of Total Soluble Protein Patterns and DNA Fingerprinting; R. Gilarová et al., Rapid Methods for Identification of Lactic Acid Bacteria by GC Analysis; A. Rodriguez-Burgos et al., Identification of Lactobacilli Isolated during the Ripening of Hard Sausage (Salchichón) from Pamplona; B. Bianchi-Salvadori et al., Rapid Enzymatic Method as Contribution to Biotyping and Control Lactic Acid Bacterial (LAB) Strains Used in the Production of Yoghurt and some Cheeses; H. Oberman et al., Freeze-Thaw Effect on the Viability and Activity of *Lactobacillus acidophilus*; K. Neyts et al., Influence of pH, Salt and Nitrite on the Catalase Activity of Lactic Acid Bacteria; C. Hertel et al., Heme and Non-Heme Catalase Activities of Lactic Acid Bacteria; B. L. Pool-Zobel et al., Protective Food Ingredients: Antimutagenicity and Antigenotoxicity of *Lactobacillus*, *Bifidobacterium* and Related Organisms; and M. Plocková et al., The Effect of the Cultivation Conditions on the Growth of Chosen Strains of *Lactobacillus acidophilus* and *Lactobacillus casei* subsp. *casei*.

Minute 4. Adjournment. The chairmen thanked all present-

ers for their contributions. The meeting was adjourned at 1:00 p.m. on 1 September.

Closed meeting

Minute 5. Call to order. The closed meeting was called to order at 9:40 a.m. by Chairperson E. Lauer.

Minute 6. Record of attendance. The members present were F. Dellaglio, F. Gasser, W. Holzapfel, A. Kagermeier-Callaway, K. W. Knox, E. Lauer, T. Mitsuoka, G. Reuter, and B. Sgorbati. Apologies were received from M. Collins, J. London, and N. Weiss. The guests present were C. Bonaparte, L. Dicks, and G. Klein.

Minute 7. Call for old business. A. Kagermeier-Callaway reported that the Secretary for Subcommittees has granted permission to include the new genus *Carnobacterium* into the scope of the subcommittee. Four species of *Carnobacterium* are presently acknowledged as valid species by the subcommittee: *C. divergens* (formerly "*Lactobacillus divergens*"), *C. piscicola* (formerly "*Lactobacillus piscicola*"), *C. gallinarum*, and *C. mobile* (M. D. Collins, J. A. E. Farrow, B. A. Phillips, S. Feresu, and D. Jones, Int. J. Syst. Bacteriol. **37**:310–316, 1987).

Minute 8. Scope of subcommittee. Some species, formerly thought of as belonging to the genera *Aerococcus* or *Pediococcus* and *Lactobacillus*, have been transferred to new genera, *Atopobium* and *Tetragenococcus*. A new genus *Helcococcus* has been created. Decisions about changing the scope of the subcommittee were postponed to the next meeting.

Minute 9. New species. The following new species were acknowledged as valid species by the subcommittee: *Lactobacillus gallinarum* (T. Fujisawa, Y. Benno, T. Yaeshima, and T. Mitsuoka, Int. J. Syst. Bacteriol. **42**:487–491, 1992), *Lactobacillus johnsonii* (T. Fujisawa, Y. Benno, T. Yaeshima, and T. Mitsuoka, Int. J. Syst. Bacteriol. **42**:487–491, 1992), and *Leuconostoc citreum* (J. A. E. Farrow, R. R. Facklam, and M. D. Collins, Int. J. Syst. Bacteriol. **39**:279–283, 1989).

Minute 10. New business. E. Lauer mentioned recent publications, stating the existence of fundamental problems with the identity of *Bifidobacterium asteroides* strains, including even subcultures of type strains obtained from different culture collections. He pointed out that for the differentiation of the strains biochemical methods such as analyses of the murein type and the electrophoretic mobilities of the L-lactate dehydrogenases should be used and that type strain *Bifidobacterium asteroides* ATCC25910 should be included for comparison. It was suggested that rRNA homology studies should be performed to establish the species as a distinct entity and to clarify its relationship to the other species of the genus *Bifidobacterium*. The importance of minimal standards for *Lactobacillus* and *Bifidobacterium* was stressed. E. Lauer volunteered to prepare a draft concerning the latter to be presented and discussed at the next meeting. A brief discussion followed concerning the proposal to move the genus *Bifidobacterium* from the scope of this subcommittee to the one concerned with *Actinomycetes*. No consensus was reached, however, and a decision was postponed until later. A discussion on the potential pathogenicity of lactobacilli followed, from which a statement

of the subcommittee was prepared. This statement precedes these minutes.

Minute 11. *New members.* Four candidates for membership were nominated to serve as members of the subcommittee. B. Biavati (Bologna, Italy) was nominated by B. Sgorbati, and the nomination was seconded by F. Dellaglio. L. Dicks (Stellenbosch, South Africa) was nominated by F. Dellaglio, and the nomination was seconded by W. Holzapfel. W. Hammes (Stuttgart, Germany) was nominated by W. Holzapfel, and the nomination was seconded by A. Kagermeier-Callaway. M.-C. Montel (St.-Genes-Champanelle, France) was nominated by F. Gasser, and the nomination was seconded by F. Dellaglio. The election of all nominees was unanimous.

Minute 12. *Present membership.* The following individuals are members of the Subcommittee on *Bifidobacterium*, *Lactobacillus*, and Related Organisms: Bruno Biavati, Bologna, Italy; Matthew D. Collins, Reading, United Kingdom; Franco Dellaglio, Verona, Italy; Leon Dicks, Stellenbosch, South Af-

rica; Francis Gasser, Paris, France; Walter Hammes, Stuttgart, Germany; Wilhelm Holzapfel, Karlsruhe, Germany; Angelika Kagermeier-Callaway (Secretary), Mainz, Germany; Kenneth W. Knox, Sydney, Australia; Eckhard Lauer (Chairperson), Berlin, Germany; Jack London, Bethesda, Md.; Tomotari Mitsuoka, Tokyo, Japan; Marie-Christine Montel, St.-Genes-Champanelle, France; W. E. C. Moore, Blacksburg, Va.; Gerhard Reuter, Berlin, Germany; Vittorio Scardovi, Bologna, Italy; Barbara Sgorbati, Bologna, Italy; and Norbert Weiss, Braunschweig, Germany.

Minute 13. *Date and place of next meeting.* The next meeting of the subcommittee will take place at the IUMS congresses in Prague, Czech Republic, in July 1994.

Minute 14. *Adjournment.* The closed meeting was adjourned at 12:20 p.m.

Angelika S. Kagermeier-Callaway, Secretary